The importance of being... RED

Lazy vs Smart

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1. Who we are?

YOOX Net-A-Porter Group: the global leader of e-commerce luxury fashion



Monitoring team: Andrea, Enrico, Gabriele, Vito and our manager Fabrizio.

WHAT do we monitor:

- Physical and virtual infrastructure in Multi-DataCenters
- Network
- Web performance
- Private & Public Cloud infrastructure
- Backend and Frontend applications

HOW:

- Zabbix
- Other tools & custom integration

2. Challenge

4 years ago **production-ready** web server could take up to **15 days**. Now cloud infrastructure can be created in some minutes.

Monitoring **cannot be slower** than infrastructure changes and provide **continuos** and **unstoppable** stability/performance.

AWS cloud services:

- IAAS: EC2 instances
- **PAAS**: RDS, SQS, ElastiCache, ELB etc.

We reached:

- automated monitoring configuration, DRIVEN by requester
- long term storage metrics
- multi-account and multi-region **centralized** view
- alerting customization and escalation process

3. On premise monitoring vs Cloud monitoring

Operational teams want to know **where** and **what is wrong** with their servers

HostMetadata in zabbix_agentd.conf file has all these infos.

A simple python script, invoked by **AutoRegistration** Action, consults a JSON file and gives the flexibility.

Long Term storage backend is provided by **Graphite** stack.

Zabbix HostGroup, Hostname, Item Description are used to compose common graphite metric syntax.

ETL flow, exports the item values from Zabbix DB, composes the metrics and sends them to Graphite.



4. Monitoring EC2 with agent

Automation tools deploy the Zabbix agent on each EC2 instance

provisioned.

Instance's info in metadata in the **agent.conf**:

- HOSTGROUP
- TEMPLATES
- OTHER: (Alerting, Triggering)

Each instance catalogued as requester need, monitoring template consulted with Monitoring Team but drived by requester.



5. Agentless monitoring

Zabbix Server integrated with AWS API and Cloudwatch.

Python plugins (**boto3** module) to call Cloudwatch.

Low Level Discovery in Host Prototype for discovery of all services and CloudWatch metrics.

The plugin send metrics to Zabbix (trigger) and to Graphite (LTS).



6. Zabbix script vs AWS Lambda

First implementation used Python as «**external scripts**» but CPU Load was very high.

Current implementation uses two AWS Lambda for each service: one for discovering, the other for collecting.

Zabbix Web Scenario sends a HTTP POST to AWS API Gateway.

POST **JSON body** passes all needed **parameters**.



7. Zabbix integration

Python plugins receive params, call AWS API, elaborate result and send JSON LLD or Item Value.

(zabbix_sender - pyzabbix)

Each Item and Discovery Rule is «Zabbix Trapper» type.

Needs: better management of **trigger** prototype **exceptions**

WorkAround: create a Global Regular Expression to filter objects from being discovered by LLD and then create static items/triggers on Templates



8. Dashboard: Grafana

First goal: provide a **single** interface to access **ALL!** metrics.

With Grafana «**Templating Variable**» a single AWS Service's DashBoard can show all metrics for each AWS Account and Region.

2 main **Organizations** configured:

- Production Org.
- Staging Org.

All Datasources (Zabbix, Graphite, ELK) are **available to anyone**.



9. On the RoadMap...

Framework:



10. Are we dreaming?

That's ALL, 5 years ago we were **just the 2 of us**.

Every day the question was: «How are we doing this things?», «have we thought of all possible consequences?», «**How did the OTHER solve our same problems?**».

We have never found and we are NOT looking for a different Monitoring Software: Zabbix is the Pillar of our Monitoring Framework.

Being here to **share**, **learn** and **dream** togheter how **monitoring will be**, is an incredible pleasure and a great motivation for **all of us** to **grow**!

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